



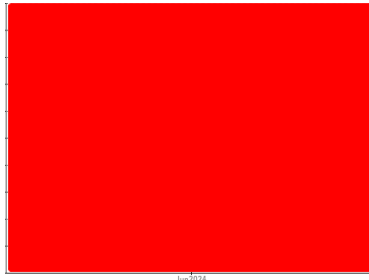
# PROBLEM SUMMARY

Sample Rating Trend

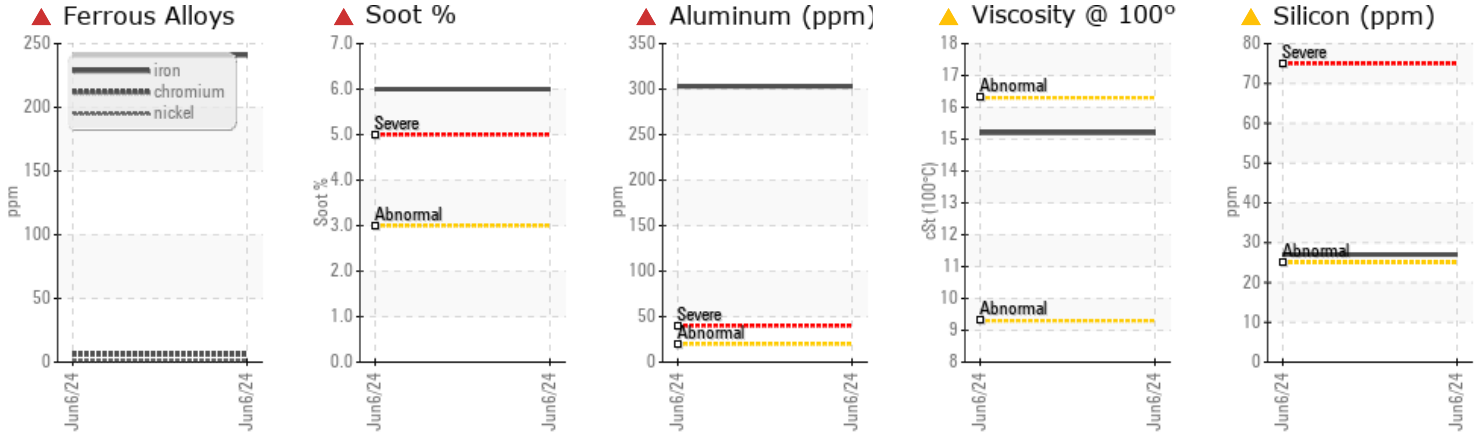
WEAR



Machine Id  
**403**  
Component  
**Diesel Engine**  
Fluid  
**PRIMROSE 790 Syn-O-Gen 8 (--- GAL)**



## COMPONENT CONDITION SUMMARY



## RECOMMENDATION

We advise that you check for faulty combustion, plugged air filters, or aftercoolers. Oil and filter change at the time of sampling has been noted. We advise that you inspect for the source(s) of wear. We recommend an early resample to monitor this condition. NOTE: High solids (carbon/soot) in the sample have limited the accuracy of Infra-Red data including Total Base Number (TBN) value.

## PROBLEMATIC TEST RESULTS

Sample Status				SEVERE	---	---
Iron	ppm	ASTM D5185m	>100	▲ 241	---	---
Aluminum	ppm	ASTM D5185m	>20	▲ 303	---	---
Silicon	ppm	ASTM D5185m	>25	▲ 27	---	---
Soot %	%	*ASTM D7844	>3	▲ 6	---	---
Base Number (BN)	mg KOH/g	ASTM D2896		▲ 0.0	---	---
Visc @ 100°C	cSt	ASTM D445		▲ 15.2	---	---

Customer Id: MIDMIDKY  
Sample No.: WC0925560  
Lab Number: 06204346  
Test Package: FLEET



To manage this report scan the QR code

To discuss the diagnosis or test data:  
Jonathan Hester +1 919-379-4092 x4092  
[jhester@wearcheckusa.com](mailto:jhester@wearcheckusa.com)

To change component or sample information:  
Customer Service +1 1-800-237-1369  
[customerservice@wearcheck.com](mailto:customerservice@wearcheck.com)

## RECOMMENDED ACTIONS

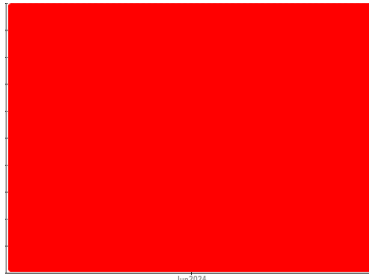
Action	Status	Date	Done By	Description
Inspect Wear Source	---	---	?	We advise that you inspect for the source(s) of wear.
Change Fluid	---	---	?	Oil and filter change at the time of sampling has been noted.
Change Filter	---	---	?	Oil and filter change at the time of sampling has been noted.
Resample	---	---	?	We recommend an early resample to monitor this condition.
Alert	---	---	?	NOTE: High solids (carbon/soot) in the sample have limited the accuracy of Infra-Red data including Total Base Number (TBN) value.
Check Combustion	---	---	?	We advise that you check for faulty combustion, plugged air filters, or aftercoolers.

## HISTORICAL DIAGNOSIS



# OIL ANALYSIS REPORT

Sample Rating Trend



WEAR



Machine Id

**403**

Component

**Diesel Engine**

Fluid

**PRIMROSE 790 Syn-O-Gen 8 (--- GAL)**

## DIAGNOSIS

### ▲ Recommendation

We advise that you check for faulty combustion, plugged air filters, or aftercoolers. Oil and filter change at the time of sampling has been noted. We advise that you inspect for the source(s) of wear. We recommend an early resample to monitor this condition. NOTE: High solids (carbon/soot) in the sample have limited the accuracy of Infra-Red data including Total Base Number (TBN) value.

### ▲ Wear

Piston and cylinder wear is indicated.

### ▲ Contamination

There is an abnormal amount of solids and carbon present in the oil. Elemental level of silicon (Si) above normal indicating ingress of seal material.

### ▲ Fluid Condition

The oil viscosity is higher than normal. The BN level is low.

## SAMPLE INFORMATION

	method	limit/base	current	history1	history2
Sample Number	Client Info		<b>WC0925560</b>	---	---
Sample Date	Client Info		<b>06 Jun 2024</b>	---	---
Machine Age	mls	Client Info	<b>204914</b>	---	---
Oil Age	mls	Client Info	<b>12000</b>	---	---
Oil Changed	Client Info		<b>Changed</b>	---	---
Sample Status			<b>SEVERE</b>	---	---

## CONTAMINATION

	method	limit/base	current	history1	history2
Water	WC Method	>0.2	<b>NEG</b>	---	---
Glycol	WC Method		<b>NEG</b>	---	---

## WEAR METALS

	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m >100	<b>▲ 241</b>	---	---
Chromium	ppm	ASTM D5185m >20	<b>6</b>	---	---
Nickel	ppm	ASTM D5185m >4	<b>2</b>	---	---
Titanium	ppm	ASTM D5185m	<b>&lt;1</b>	---	---
Silver	ppm	ASTM D5185m >3	<b>0</b>	---	---
Aluminum	ppm	ASTM D5185m >20	<b>▲ 303</b>	---	---
Lead	ppm	ASTM D5185m >40	<b>6</b>	---	---
Copper	ppm	ASTM D5185m >330	<b>14</b>	---	---
Tin	ppm	ASTM D5185m >15	<b>&lt;1</b>	---	---
Vanadium	ppm	ASTM D5185m	<b>0</b>	---	---
Cadmium	ppm	ASTM D5185m	<b>0</b>	---	---

## ADDITIVES

	method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	<b>105</b>	---	---
Barium	ppm	ASTM D5185m	<b>0</b>	---	---
Molybdenum	ppm	ASTM D5185m	<b>87</b>	---	---
Manganese	ppm	ASTM D5185m	<b>2</b>	---	---
Magnesium	ppm	ASTM D5185m	<b>393</b>	---	---
Calcium	ppm	ASTM D5185m	<b>1360</b>	---	---
Phosphorus	ppm	ASTM D5185m	<b>1032</b>	---	---
Zinc	ppm	ASTM D5185m	<b>1248</b>	---	---
Sulfur	ppm	ASTM D5185m	<b>3429</b>	---	---

## CONTAMINANTS

	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m >25	<b>▲ 27</b>	---	---
Sodium	ppm	ASTM D5185m	<b>4</b>	---	---
Potassium	ppm	ASTM D5185m >20	<b>19</b>	---	---
Fuel	%	ASTM D3524 >2.0	<b>&lt;1.0</b>	---	---

## INFRA-RED

	method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844 >3	<b>▲ 6</b>	---	---
Nitration	Abs/cm	*ASTM D7624 >20	<b>29.0</b>	---	---
Sulfation	Abs/.1mm	*ASTM D7415 >30	<b>48.3</b>	---	---

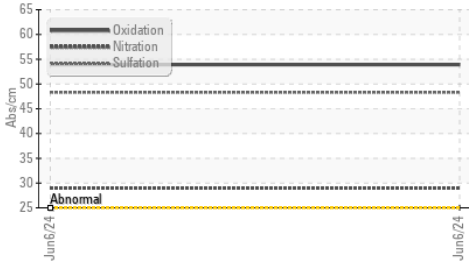
## FLUID DEGRADATION

	method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414 >25	<b>53.9</b>	---	---
Base Number (BN)	mg KOH/g	ASTM D2896	<b>▲ 0.0</b>	---	---

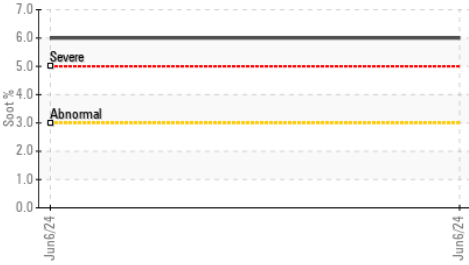


# OIL ANALYSIS REPORT

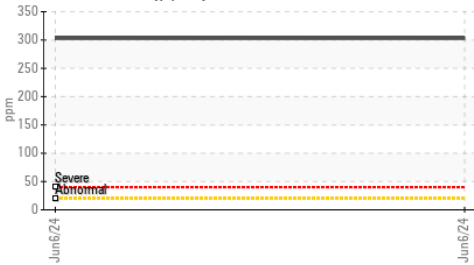
▲ FT-IR (Direct Trend)



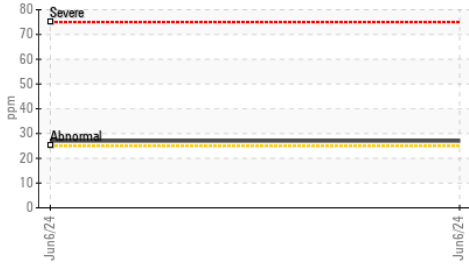
▲ Soot %



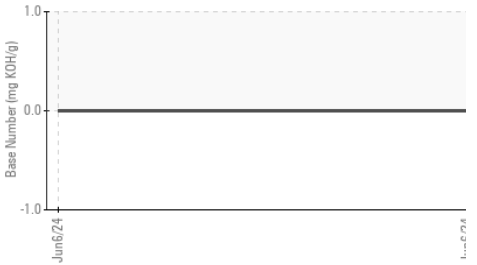
▲ Aluminum (ppm)



▲ Silicon (ppm)



▲ Base Number

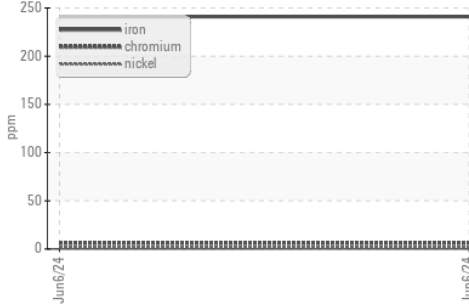


VISUAL	method	limit/base	current	history1	history2	
White Metal	scalar	*Visual	NONE	NONE	---	---
Yellow Metal	scalar	*Visual	NONE	NONE	---	---
Precipitate	scalar	*Visual	NONE	NONE	---	---
Silt	scalar	*Visual	NONE	NONE	---	---
Debris	scalar	*Visual	NONE	NONE	---	---
Sand/Dirt	scalar	*Visual	NONE	NONE	---	---
Appearance	scalar	*Visual	NORML	NORML	---	---
Odor	scalar	*Visual	NORML	NORML	---	---
Emulsified Water	scalar	*Visual	>0.2	NEG	---	---
Free Water	scalar	*Visual		NEG	---	---

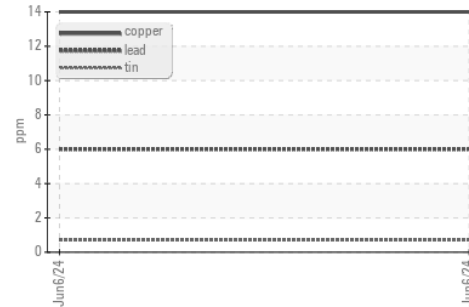
FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	▲ 15.2	---	---

## GRAPHS

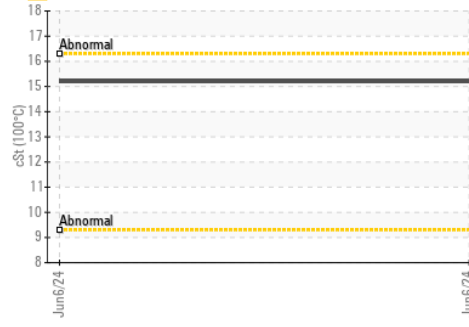
▲ Ferrous Alloys



Non-ferrous Metals



▲ Viscosity @ 100°C



▲ Base Number



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : WC0925560      **Received** : 10 Jun 2024  
**Lab Number** : 06204346      **Tested** : 13 Jun 2024  
**Unique Number** : 11071807      **Diagnosed** : 13 Jun 2024 - Jonathan Hester  
**Test Package** : FLEET ( Additional Tests : FuelDilution )

**MIDDLESBORO COCA-COLA BOTTLING - MCCB**  
 1324 E CUMBERLAND AVE  
 MIDDLESBORO, KY  
 US 40965

Contact: TIM GOINS  
 tgoins@mccbw.com  
 T: (606)248-0362  
 F: (606)248-1382

To discuss this sample report, contact Customer Service at 1-800-237-1369.

\* - Denotes test methods that are outside of the ISO 17025 scope of accreditation.

Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)